

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An ultra-light sound insulator, comprising:
a sound absorption layer that is light in weight and has a thickness in a range of 1 to 100 mm, a density in a range of 0.01 to 0.2 g/cm³ ~~or more preferably in a range of 0.03 to 0.08 g/cm³~~; and
an air-impermeable resonance layer in the form of a foam or a film that is bonded to said sound absorption layer via an adhesive layer and has an area-weight of not greater than 600 g/m² ~~or more preferably of not greater than 300 g/m²~~,
wherein an adhesion strength of said adhesive layer against said sound absorption layer and said air-impermeable resonance layer is set in a range of 1 to 20 N/25 mm ~~or more preferably in a range of 3 to 10 N/25 mm~~ under conditions of a peel angle of 180 degrees and a peel width of 25 mm,
an adhesion area of said adhesive layer is 50 to 100% ~~or more preferably 80 to 100%~~ of a whole interface between said sound absorption layer and said air-impermeable resonance layer so that resonance due to a total mass of said air-impermeable resonance layer and said sound absorption layer occurs in addition to membrane resonance of said air-impermeable resonance layer, and

said sound absorption layer ~~faces~~ is adapted to face to a vehicle body panel, while said air-impermeable resonance layer ~~faces~~ is adapted to face to a vehicle interior.

2. (Previously Presented) An ultra-light sound insulator in accordance with claim 1, wherein said sound absorption layer has a multi-layer structure of a high-density sound absorption layer and a low-density sound absorption layer.

3. (Original) An ultra-light sound insulator in accordance with claim 2, wherein said high-density sound absorption layer has a density in a range of 0.05 to 0.20 g/cm³ and a thickness in a range of 2 to 70 mm, and

said low-density sound absorption layer has a density in a range of 0.01 to 0.10 g/cm³ and a thickness in a range of 2 to 70 mm.

4. (Currently Amended) An ultra-light sound insulator in accordance with claim 2, wherein said high-density sound absorption layer has an initial compression repulsive force in a range of 30 to 600 N ~~or more preferably in a range of 50 to 300 N,~~

said low-density sound absorption layer has an initial compression repulsive force in a range of 5 to 300 N ~~or more preferably in a range of 10 to 100N,~~ and

said initial compression repulsive force of said high-density sound absorption layer is at least 1.2 to 40 times said initial compression repulsive

force of said low-density sound absorption layer and said high-density sound absorption layer has a thickness occupying 20 to 80% of said thickness of said sound absorption layer, ~~or more preferably said initial repulsive force of said high density sound absorption layer is at least 1.5 to 5 times said initial compression repulsive force of said low density sound absorption layer and said high density sound absorption layer has a thickness occupying 40 to 60% of said thickness of said sound absorption layer.~~

5. (Original) An ultra-light sound insulator in accordance with claim 1, wherein said sound absorption layer has a mono-layer structure and has a density in a range of 0.02 to 0.20 g/cm³ and a thickness in a range of 2 to 70 mm.

6. (Currently Amended) An ultra-light sound insulator in accordance with claim 5, wherein said sound absorption layer has an initial compression repulsive force in a range of 2 to 200 N ~~or more preferably in a range of 20 to 100 N.~~

7. (Currently Amended) An ultra-light sound insulator in accordance with claim 1, said ultra-light sound insulator further comprising a second sound absorption layer bonded to the other face of said air-impermeable resonance layer, which ~~faces~~ is adapted to face to said vehicle interior, said second sound absorption layer having a density in a range of 0.01 to 0.2 g/cm³ ~~or more preferably in a range of 0.05 to 0.15 g/cm³ and a~~

thickness in a range of 1 to 20 mm ~~or more preferably in a range of 4 to 10 mm.~~

8. (Currently Amended) An ultra-light sound insulator in accordance with claim 7, wherein said second sound absorption layer has ~~either of a mono-layer structure and a multi-layer structure.~~

9. (Currently Amended) An ultra-light sound insulator in accordance claim ~~7~~ 8, wherein said second sound absorption layer has a multi-layer structure of a lower layer and an upper layer,

said lower layer of said second sound absorption layer being bonded to said air-impermeable resonance layer or otherwise said upper layer and said lower layer of said second sound absorption layer being laid one upon said other by means of a mechanical boring force.

10. (Currently Amended) An ultra-light sound insulator in accordance with claim 1, wherein said air-impermeable resonance layer is either of a foam ~~and a film,~~

~~said air-impermeable resonance layer having a thickness in a range of 1 to 7 mm or more preferably in a range of 2 to 3 mm in the case of said foam, while having a thickness in a range of 10 to 600 μ m or more preferably in a range of 20 to 300 μ m in the case of said film.~~

11. (New) An ultra-light sound insulator in accordance with claim 1,

wherein said air-impermeable resonance layer is a foam having a thickness in a range of 2 to 3 mm.

12. (New) An ultra-light sound insulator in accordance with claim 1, wherein said air-impermeable resonance layer is a film having a thickness in a range of 10 to 600 μm .

13. (New) An ultra-light sound insulator in accordance with claim 1, wherein said air-impermeable resonance layer is a film having a thickness in a range of 20 to 300 μm .

14. (New) An ultra-light sound insulator in accordance with claim 1, wherein said sound absorption layer has a density in a range of 0.03 to 0.08 g/cm^3 .

15. (New) An ultra-light sound insulator in accordance with claim 1, wherein said air-impermeable resonance layer has an area-weight of not greater than 300 g/m^2 .

16. (New) An ultra-light sound insulator in accordance with claim 1, wherein said adhesion strength of said adhesive layer against said sound absorption layer and said air-impermeable resonance layer is set in a range of 3 to 10 N/25 mm under conditions of a peel angle of 180 degrees and a peel width of 25 mm.

17. (New) An ultra-light sound insulator in accordance with claim 1, wherein said adhesion area of said adhesive layer is 80 to 100% of a whole interface between said sound absorption layer and said air-impermeable resonance layer.

18. (New) An ultra-light sound insulator in accordance with claim 1, wherein said sound absorption layer a density in a range of 0.03 to 0.08 g/cm³, said air-impermeable resonance layer has an area-weight of not greater than 300 g/m², said adhesion strength of said adhesive layer against said sound absorption layer and said air-impermeable resonance layer is set in a range of 3 to 10 N/25 mm under conditions of a peel angle of 180 degrees and a peel width of 25 mm and said adhesion area of said adhesive layer is 80 to 100% of a whole interface between said sound absorption layer and said air-impermeable resonance layer.

19. (New) An ultra-light sound insulator in accordance with claim 2, wherein said high-density sound absorption layer has an initial compression repulsive force in a range of 50 to 300 N,

said low-density sound absorption layer has an initial compression repulsive force in a range of 10 to 100N, and

said initial compression repulsive force of said high-density sound absorption layer is at least 1.5 to 5 times said initial compression repulsive force of said low-density sound absorption layer and said high-density sound

absorption layer has a thickness occupying 40 to 60% of said thickness of said sound absorption layer.

20. (New) An ultra-light sound insulator in accordance with claim 5, wherein said sound absorption layer has an initial compression repulsive force in a range of 20 to 100 N.

21. (New) An ultra-light sound insulator in accordance with claim 1, said ultra-light sound insulator further comprising a second sound absorption layer bonded to the other face of said air-impermeable resonance layer, which is adapted to face to said vehicle interior,

said second sound absorption layer having a density in a range of 0.05 to 0.15 g/cm³ and a thickness in a range of 4 to 10 mm.

22. (New) An ultra-light sound insulator in accordance with claim 21, wherein said second sound absorption layer has a mono-layer structure.

23. (New) An ultra-light sound insulator in accordance with claim 21, wherein said second sound absorption layer has a multi-layer structure.

24. (New) An ultra-light sound insulator in accordance claim 23, wherein said second sound absorption layer has a multi-layer structure of a lower layer and an upper layer,

said lower layer of said second sound absorption layer being bonded to said air-impermeable resonance layer or otherwise said upper layer and said lower layer of said second sound absorption layer being laid one upon said other by means of a mechanical boring force.

25. (New) An ultra-light sound insulator in accordance with claim 1, wherein said second sound absorption layer has a multi-layer structure.

26. (New) An ultra-light sound insulator in accordance claim 25, wherein said second sound absorption layer has a multi-layer structure of a lower layer and an upper layer,

said lower layer of said second sound absorption layer being bonded to said air-impermeable resonance layer or otherwise said upper layer and said lower layer of said second sound absorption layer being laid one upon said other by means of a mechanical boring force.